RCC SCRAP TIRE WORKGROUP SUMMARY OF ACTION PLANS

2007

The Scrap Tire Workgroup contributes to the overall goals of the Resource Conservation Challenge (RCC). The five committees of the RCC Scrap Tire Workgroup have developed action plans in order to support the following overall goals of the workgroup.

Uses for Scrap Tires Explored in the Action Plans

- Tire derived aggregate is useful in many civil engineering applications, such as road and landfill construction.
- Ground rubber applications include recycling the rubber into new products, playground, and sports surfacing.
- Rubberized asphalt is a more safe, durable, and quiet alternative for roads.
- Tire derived fuel can be used as a replacement for fossil fuels in approved devices such as cement kilns with proper controls.

GOAL #1: Divert 85% of newly generated scrap tires to reuse, recycling or energy recovery by 2008 (vs. 70% in 2003).

Finding strong and diverse markets for scrap tires is the best strategy for diverting scrap tires from tire piles and landfills. Due to the large number of scrap tires generated every year (approx. 290 million), a major disruption in the markets will cause a significant increase in tire piles and an increase in the number of tires that are disposed in landfills. The more diverse the markets are, the better able they are to accommodate potential fluctuations. (See Change in Scrap Tire Market Segments table below for more information on how progress made in these market segments contributes to the overall goal.)

The RCC Scrap Tire Workgroup

The Resource Conservation Challenge (RCC) is a multi-faceted initiative implemented by USEPA with three overarching goals:

1) to prevent pollution and promote recycling and reuse of materials;
2) to reduce the use of toxic chemicals; and
3) to conserve energy and materials.

The Scrap Tire Workgroup of the RCC has created five committees to work on various issues related to scrap tire management and markets. These committees consist of representatives from various state environmental agencies, industry, EPA, and academia with expertise in scrap tire management, market development, and application technologies.

The committees' efforts directed towards this goal focus on:

- Researching viable scrap tire applications
- Recognizing legitimate uses of scrap tires by the developing markets
- Conducting outreach

GOAL #2: Reduce by 55% the number of tires in existing (270 million in 2003) stockpiles by 2008.

Success in achieving this goal is dependent on cooperation between states and current Workgroup contributors.

Committee Action Plans Index

These Action Plans call for 18 distinct projects which are planned to collectively achieve the overall goal for diversion of scrap tires to reuse, recycling or energy recovery and the goal of tire pile reduction. Most work will be performed by RCC Scrap Tire Workgroup members over the next 2 years, but resources provided by numerous associated organizations are critical to the success of this effort. This is the final action plan for the initial RCC focus, although the committees anticipate some adjustments prior to the end of 2008 since they anticipate that some steps will need to be modified in order to react to developing situations.

Change in Scrap Tire Market Segments:
The 2003 and 2005 RMA Reports state the following changes within each major market share (2005 Edition, Scrap Tire Markets in the United States, Page 86 https://www.rma.org/publications/scrap_tires/index.cfm?PublicationID=11453). This chart tracks progress made in each of the major scrap tire market segments that the scrap tire committees are working to expand and strengthen.

Market Segment (This is not inclusive of all market segments)	**2003 Market Data (millions of tires / % of all scrap tires generated)**	**2005 Market Data (millions of tires / % of all scrap tires generated)**	**Difference Between 2003 and 2005**
Ground Rubber	28.2 / 10%	37.4 / 12%	+ 2 % points
Rubberized Asphalt (subset of Ground Rubber)	10.0/3%	7.4 / 2%	- 1 % point
Civil Engineering	56.4 / 19%	49.2 / 16%	- 3 % points
Tire Derived Fuel (TDF)	129.7 / 45%	155.1 / 52%	+ 7 % points

Note that the information in the table is taken directly from the RMA reports whereas the targets expressed in the description of Goal #1 above are calculated based on weight. Thus, while the targets for Goal #1 are based on RMA's reports, there is a small discrepancy between the numbers expressed in the table above, and those in the description of Goal#1. Until sufficient weight-based data is available, each market sector's diversion percentages will be unit-based and taken directly from the RMA Reports.

Contributors to the
RCC Scrap Tire Action Plan

States

Arkansas Dept. of Environmental Quality
California Integrated Waste Management Board
Florida Dept. of Environmental Protection
Georgia Dept. of Natural Resources
Illinois Environmental Protection Agency
Kentucky Dept. of Environmental Protection
Minnesota Dept. of Transportation
Mississippi Dept. of Environmental Quality
Missouri Dept. of Natural Resources
Montana Dept. Of Environmental Quality
North Carolina Division of Waste Management
New Mexico Environment Dept.
Oklahoma Dept. of Environmental Quality
Pennsylvania Dept. of Environmental Protection
South Carolina Dept. of Health and the Environment
South Dakota Dept. of Environment and Natural Resources
Texas Commission on Environmental Quality
Utah Division of Solid and Hazardous Waste
Virginia Dept. of Environmental Quality

Academia

Clemson University
University of Maine

Trades / Industry

Cement Kiln Recycling Coalition,
DK Enterprises
Institute of Scrap Recycling Industries
JaiTire Portland Cement Industries, Inc.
Liberty Tire Services Inc.
PolyVulc
Portland Cement Association
Rhode Island Resource Recovery Association
Recycling Research Institute / Scrap Tire News
Rubber Applications & Technologies
Rubber Pavement Association
Rubber Manufacturers Association
TAG Resource Recovery
Tex-American Recycling and Tire Disposal
Tire Industry Association
Tri-Rinse, Inc

Federal Agencies

FHWA, EPA

I. Goals and Stockpile Reduction Committee Action Plan

Committee Members:
Chairman: Ethan Mayeu, Mississippi DEQ

- Michael Blumenthal, Rubber Manufacturers Association
- Jan Rae Clark, Florida DEP
- Dan Fester, Missouri DNR
- Terry Gray, TAG Resource Recovery
- Cynthia Hackathorn, Texas CEQ
- Elizabeth Hoover, Arkansas DEQ
- Mike Hoyles, EPA Region 10
- Denise Kennedy, DK Enterprises
- Tim Landers, Liberty Tire Service, Inc.
- Todd Marvel, Illinois EPA
- Allan Lassiter, Virginia DEQ
- Pam Moore, North Carolina Div SW
- Mary Sikora, TIA, Recycling Research Institute
- Tab Tesnau, EPA HQ
- Jana White, South Carolina DHEC

1. Purpose

- Establish overall goals for the entire workgroup.
- Develop projects related to measuring the diversion goal and achieving the stockpile reduction goal.

2. Goals and Targets

The goals adopted by the full RCC Tire Work Group in 2003 were as follows:

Goal #1 Divert 85% of newly generated scrap tires to reuse, recycling or energy recovery by 2008 (vs. 70% in 2003).

Goal #2 Reduce by 55% the number of tires in existing (270 million in 2003) stockpiles by 2008.

Overall success of the Committees will be achieved when the diversion goal and tire pile reduction goal are met. The metrics are based on the RMA survey data, which is collected primarily by the states.

3. Project Descriptions

Project for Goal #1

Goal #1 Project #1: Weight-based 2005 State Market Survey and Report

The Goals and Stockpile Reduction Committee will assist the Rubber Manufacturers Association (RMA) in restructuring its biennial scrap tire generation and end market data effort to successfully convert to weight-based analysis for the 2005 evaluation period. Second, once the survey is finalized, a copy will be sent to all states to advise them on the changes. Third, once the survey is distributed by RMA, the Committee members will contact all 50 states to offer assistance and encourage timely submission. Lastly, at RMA's request, the Committee members will review the data submitted and RMA's 2005 report.

From these efforts, the Committee in 2006 will develop a method to assist states in improving their data collection efforts and provide a forum for presenting it to state agencies.

a. Timing
-Survey restructure - 2nd Quarter, 2005
-Distribute "sample" survey to the states as a preview- (once finalized by RMA)
-Contact all 50 states (after RMA survey distribution-2005)
-Review submitted data and report (at RMA's request-2006)
-State data collection assistance effort-2006
- EPA Staff time to develop and present state data assistance strategies

b. Outcomes
-Revised RMA State's Market Survey
-"Participatory" State data collection activity-2006
-State data assistance program-2006

c. Resource Requirements
-Committee member time commitment
-Professional staff time to develop state data assistance strategies and guidance document

d. Implementation Plan
-All done by Committee members if funding for professional time can be located. Otherwise, the project needs support by EPA or other entity.

Projects for Goal #2

Goal #2 Project #1: Tire Pile Cleanup Guidance Dissemination

The Goals and Stockpile Reduction Committee will promote new products designed to facilitate the cleanup of scrap tire piles. Once EPA's new Scrap Tire Cleanup Guide is available, mail a paper copy with a personal letter to each State's DEQ or EPA and to as many cleanup contractors as can be identified. Once placed on EPA's website, refer recipients to each Power Point presentation from the Louisville (April, 2005) Scrap Tire Cleanup Forum. Assist EPA, states and other facilitators in organizing and speaking at future Forums. Lastly, provide detailed information on the cost and benefits of EPA's state-wide tire pile mapping project to these parties.

a. Timing
-Guidebook- Once released by EPA- 2006
-Website - Once released by EPA- 2005
-Mapping Project-Once details, specs and costs are documented by EPA's contractor – 2005
-Cleanup Forums as requested

b. Outcomes

-Guidance document and products on tire pile cleanups which should help states do cleanups faster

c. Resource Requirement
-Modest printing and mailing costs
-Committee member time commitment

d. Implementation Plan
-All done by Committee members if resources are secured. Otherwise, the project needs support by EPA or other entity.

Goal #2 Project #2: State Tire Pile Assessment and Peer Assistance

The Goals and Stockpile Reduction Committee will analyze the situation in all 50 states, focusing on the 11 states that contain over 90 % of the remaining piles. Seek forums to meet with state officials to offer peer information and consultations. Prepare analysis of the tire pile situation based on 2005 data and consider revising the stockpile reduction goal, if appropriate.

a. Timing
– Assemble revised stockpile data- 2006
- EPA Assists committee member and others in securing venues for peer consultations and publishing findings
- Forums for peer consultations and assistance
ASTSWMO- 2005, 2006
RCRA conference- 2006
Western States conference- 2006

b. Outcomes - Revised state tire pile forecasts
- Multiple peer consultations
- Revised stockpile goal, if needed

c. Resource Requirements
- Committee member time and travel commitments
- Cooperation of sponsoring agencies

d. Implementation Plan
- All done by Committee members, if travel budgets allow. Otherwise, the project needs support by EPA or other entity.

II. Ground Rubber Committee Action Plan

Committee Members
Chairman: Calvin Young, California IWMB

- Michael Blumenthal, RMA
- Lisa Evans, Kentucky DEP
- Dave Forrester, TIRES, Inc.
- Terry Gray, TAG Resource Recovery
- Elizabeth Hoover, Arkansas DEQ
- Denise Kennedy, DK Enterprises
- Lon Revall, Georgia DNR
- Mary Sikora, TIA, Recycling Research Institute
- Corny Snyder, Jai Tire Industries, Inc.
- Tab Tesnau, EPA HQ
- Brian Wright, Georgia DNR

1. Purpose

To promote increased use of ground rubber made from scrap tires.

The Subcommittee is focusing on three activities to enhance market growth:

- Educate producers and potential users
- Identify barriers and solutions
- Identify and mobilize champions

2. Market Trends

RMA reports that the number of tires diverted to ground rubber increased from 28.2 million tires in 2003 to 37.4 million tires in 2005. This represents an increase of 2% points of ALL tires generated.

3. Background

There are various uses for ground rubber. The four major ground rubber use markets today are:

- **Playground –** (loose, tiles, pour-in-place);
- **Sports Surfacing –** (sports turf, top dressing, golf courses);
- **Colored Mulch –** (effectively being marketed today, biggest barrier is cost, address institutional barriers); and
- **Molded Products –** (flooring, mats & extruded products).

Market Barriers & Solutions	
Barriers	**Solutions**
❑ **Health Issues**: ✓ Toxicology ✓ Volatility (Fumes) ❑ **Environmental Issues** ✓ Leachate ❑ **Safety Issues** ✓ Flammability (rate of spread) ✓ Wire ❑ **Ground Rubber Marketing** ✓ Very few ground rubber producers are good at marketing their products ✓ Ground rubber producers have very little money available for marketing ✓ In many cases the producer's marketing of ground rubber produce amounts to undercutting competitor's price. ❑ **Quality Control** ✓ Ground rubber producers still have great difficulty producing consistent product that meets user specifications ✓ Very few ground rubber producers have active/effective quality control programs ❑ **Imports** ✓ Product produced from ground rubber that is imported into the U.S. from other countries. ✓ The outsourcing to other countries the manufacture of products containing ground rubber. ❑ **Other Issues** ✓ Will the black rub off ✓ Colorizing (health, environmental) ✓ Bugs (mulch) ✓ Product floating away after heavy rain (mulch) ✓ Loss of <u>existing</u> market because producers cannot produce a consistent product.	**Need Champions:** This market segment could benefit from individuals or organizations that promote the use of ground rubber in various applications. These "champions" must be persistent in their promotional message. One-time promotion events are not likely to succeed in increasing growth in this market. ❑ National – Recommend that EPA through **RCC be the primary champion and spearhead the effort.** ✓ Compile success stories, technical reports, available products, and marketing tools. ✓ Compile studies to address institutional barriers of each ground rubber product. ✓ Committee develops a recommendation that EPA through RCC effort spearhead needed studies. Identify partners to co-sponsor the study(s). ✓ Coordinate with various partners to create cross links on the web (EPA, RMA, STN, RCC, etc. websites). ✓ Outreach through conferences ❑ **States** ✓ Develop champions in each state ✓ Educate – sell on products merits **State experience**: Some ground rubber products are not viable without state subsidies. States also subsidize to give higher visibility to their programs and the associated benefits.

4. Project Description

The Subcommittee initially identified perceived barriers to growth of major ground rubber market segments (as summarized in the table above), then developed specific projects intended to assist the industry in overcoming these barriers.

The key to increasing ground rubber usage is providing technical assistance, information, market development tools and resources to ground rubber producers and end use markets. The objective is to assist and guide the industry in accelerating its historical market growth, with full recognition that the industry itself must drive the accomplishment. The Subcommittee defined the following categorical action plans and specific projects for implementation as rapidly as possible:

Action Plan Projects (Solutions)

a. Compile success stories
b. Compile technical reports and studies (through RCC and states)
c. Encourage cooperative marketing programs
d. Encourage quality control programs
    i. ISO type certifications (thru association audits)
    ii. Training programs

e. Distribute Information
    i. Partner web-sites
    ii. Conferences
    iii. RCC/States

Ground Rubber Committee Project #1: Reports and Studies

- Description: Sharing information is essential to leverage scarce public resources and effectively promote uses for ground rubber. This project will compile available technical reports, research studies, and case studies on ground rubber uses. The reports and studies will be summarized and posted on the USEPA's website.

- Timing: To contract with a university and to have the information summarized and prepared for USEPA to post on its website should take approximately nine months.

- Expected Outcomes: A summary of reports, technical studies, and case studies on ground rubber uses will be categorized and posted on the USEPA website.

- Resource Requirements: The state of California may provide funding to a California-based university or contractor for this activity. Additional support may be needed for technical review of some reports. Possible sources include ISRI, RMA, and other industry associations.

- Metrics: Success will be measured by compilation of the information into a usable form for the USEPA to post on its web site.

Ground Rubber Committee Project #2: Encouraging Cooperative Marketing

- Description: Businesses usually pursue their own marketing and customer education efforts. Certain industry sectors (such as sports surfacing, playground, and colored mulch applications) may benefit from pooling resources for cooperative marketing, cooperative customer education, and a consistent product "branding" message.

  Such cooperation may expand markets by sharing marketing expenses, providing a consistent message, and enabling businesses to focus their resources on targeted marketing efforts rather than "image building" or education efforts. A cooperative effort is not applicable for all industry sectors nor are all of the participants in any identified industry sector expected to cooperate. Cooperation does not entail sharing "trade secrets" but agreeing on a standard or specification and participating in the marketing commitment.

- Timing: Immediately discuss the equestrian model with organizers and current participants to gain perspective and benefit from lessons learned. Identification of two potential industry sectors and key businesses within those sectors is expected within three months. Meetings and conference calls with key participants to more fully develop the specific goals and program parameters is expected to take another six months. Implementation is dependent on business participation and should commence in 12 – 18 months.

- Expected Outcomes: A process and framework for a business-led cooperative marketing and customer education program for one industry sector. This should result in an increase in customer awareness and a pooling of resources for marketing efforts.

- Resource Requirements: A dedicated facilitator/coordinator to guide and monitor the process and results. Some nominal cost for conference calls, etc should be absorbed by the facilitator/coordinator. EPA can set up meetings and conference calls.

- Metrics: Success will be measured by the implementation of a cooperative marketing and customer education program by one sector on a regional or national basis.

Ground Rubber Committee Project #3: Quality Control Programs

- Description: Many ground rubber producers do not produce a consistent product that meets user specifications. Unfortunately, few ground rubber producers have active/effective quality control programs.

- Timing: Work with the Institute of Scrap Recycling Industries, Inc (ISRI) and others to develop standards within 18 months.

- Expected Outcomes: Results includes voluntary industry standard and best practices for an effective quality control program.

- Resource Requirements: ISRI or other industry organization to take lead.

- Metrics: Success will be measured by adoption of a voluntary industry standard by producers that account for a majority of the ground rubber produced in the United States.

III. Civil Engineering Committee Action Plan

Committee Members
Chairman: Todd Marvel, Illinois EPA

- Sergi Amirkhanian, Clemson University
- Michael Blumenthal, RMA
- George Gilbert, KY DEP
- Terry Gray, TAG Resource Recovery
- Jason Harrington, FHWA
- Dana Humphrey, University of Maine – Orono
- Denise Kennedy, DK Enterprises
- Blake Nelson, MN DOT
- Monte Niemi, First State Tire Recycling
- Hope Pillsbury, EPA Headquarters
- Tab Tesnau, EPA Headquarters
- Bill Vincent, ISRI, Colt Industries

1. Purpose

Work with industry, academia, and all levels of government to identify civil engineering "champions" and increase the usage of civil engineering applications for scrap tires.

Current civil engineering (CE) applications for scrap tires are grouped into five primary categories:

1) Road construction (lightweight fill over weak soils as road sub-grade and in bridge embankments, retaining wall backfill, lightweight aggregate behind bulkheads, landslide stabilization, insulation in cold climates, and as a high-permeable medium for edge drains)
2) Landfill construction (leachate drainage/collection layer, surface water drainage/collection layer under landfill cap, and gas migration/collection layer under landfill cap)
3) Septic field drainage medium (backfill around effluent leach field piping)
4) Vibration damping layer under railroads
5) Backfill for residential foundation walls

These civil engineering applications use tire derived aggregate (TDA). TDA generally consists of scrap tire chips that are 3 to 12 inches in size. The special properties of TDA that create this value are: light weight, high permeability, low thermal conductivity, vibration damping characteristics, compressibility, and reduced lateral loading.

2. Market Trends

RMA reports that the number of tires diverted to civil engineering applications decreased from 56.4 million tires in 2003 to 49.2 million tires in 2005. This represents a decrease of 3% points of ALL tires generated.

3. Background

It is important to continually identify, analyze, and minimize (or eliminate where possible) barriers to CE applications for TDA. These barriers are primarily regulatory, institutional, cost-related, or perception-related in nature. The barriers identified by the CE Subcommittee are listed below.

- There is a lack of clear acceptance and approval from some state environmental and public health agencies regarding the use of TDA, due primarily to water quality and environmental toxicology concerns.

- Some states consider TDA as a solid waste, therefore subjecting the use of TDA in CE applications to the full solid waste storage and disposal requirements.

- Regulations that designate all TDA as a solid waste are largely due to the activity of past "bad actors," where states have been stuck with the cleanup bill involving the removal of shredded tire stockpiles. A major factor related to this barrier is the speculative accumulation of TDA by the scrap tire processing industry prior to the development and approval of sound specifications and regulatory approval for the application.

- Some states consider the use of TDA in CE applications as experimental. Some charge a fee ($500.00) even for small projects. These are significant barriers to the utilization of TDA in such applications.

- There is a lack of sophistication within the scrap tire processing industry in producing a product to a specification within a specified time frame.

This action plan must always be considered a dynamic document that should be reviewed and modified, if necessary, on at least an annual basis to ensure that all current issues are addressed within the analysis and recommendations identified herein.

4. Project Description

Note, please review the additional information in the fourth section to obtain a better understanding of the basis for the selection of the following projects.

RCC Civil Engineering Committee Project #1: Available Water Quality and Environmental Toxicology Summary

Description: This project involves the compilation of available water quality and environmental toxicology data into a summary with the intent to submit the summary to USEPA for review and endorse/promote on website. This project is being conducted by students working under the direction of Dr. Dana Humphrey at the Univ. of Maine (Orono).

Timing: This project will begin as soon as approval and funding is secured and is expected to take approx. 3-4 months.

Expected Outcomes: The summary, once it is compiled and reviewed by the CE Committee, will be presented to USEPA for their official recognition and presentation to stakeholders to encourage civil engineering applications for tire-derived aggregate. The summary, along with recognition of its validity by USEPA, will then be posted on USEPA's web site. The CE Committee will assist EPA in all facets of this project.

Resource Requirements: The Univ. of Maine (Orono) will need funding for this project, primarily for staff salaries, as well as printing ad other miscellaneous costs. Funding sources for this project include RMA, TIA, and possibly RPA.

Metrics: The primary measures of success for this project are the successful compilation of a comprehensive summary of available data as well as USEPA's

recognition of this summary as valid. Further metrics may include the increase in CE applications of TDA after the intended outreach has been conducted.

RCC Civil Engineering Committee Project #2: Reseed NCHRP Synthesis of Practice on Use of TDA in Road Construction CE Applications

Description: This project involves the compilation and presentation of a synthesis proposal on the use of TDA in road construction CE applications to the National Cooperative Highway Research Program (NCHRP). A proposal was submitted to NCHRP in January 2005. However it was not selected. This project, a joint effort between Dr. Dana Humphrey of the Univ. of Maine (Orono) and Jason Harrington of the FHWA, involves the revision of the proposal for resubmittal to NCHRP in January 2006 for reseeding and selection.

Timing: This project is currently ongoing and the deadline to submit a revised proposal to NCHRP is late January 2006.

Expected Outcomes: The proposal to prepare an NCHRP synthesis, once it is revised, will be presented to NCHRP for reseeding and selection. The expected outcome is to have the proposal selected for development and publication.

Resource Requirements: No funding is necessary for the revision of the synthesis proposal. If and when the proposal is selected, NCHRP will provide the funding necessary for development and publication of the synthesis.

Metrics: The primary measure of success for this project is the successful reseeding and selection of the proposal for synthesis development.

RCC Civil Engineering Committee Project #3: Develop and Implement a Template for the Compilation and Publication of a Comprehensive Compendium of Successful CE Applications

Description: This project involves the development and use of a template that will be used to collect standardized, critical information on successful CE applications in order to compile a compendium of such applications as well as create a standard publication format to facilitate the promotion of successful CE applications on various web sites (USEPA, RMA, etc.), trade magazines, and mass media organizations.

Timing: This project has begun and the compilation of a comprehensive CE application compendium will take approximately 3-4 months. Promotion of ongoing and future CE applications will be an ongoing project.

Expected Outcomes: The objective for this project is the compilation of a nationwide, standardized CE application compendium as well as the development and future use of example publications of CE application success stories.

Resource Requirements: No funding is necessary for this project. The RCC CE Committee will compile the compendium and develop example publications for future use/reference.

Metrics: The primary measure of success for this project is the successful compilation of a CE application compendium as well as the development and use of example publication templates.

RCC Civil Engineering Committee Project #4: Development of a CE Application DVD that Promotes the Use of TDA in CE Applications

Description: This project involves the development of a DVD that will be distributed by CE Committee members and other CE application champions to entities that are responsible for making decisions on the type of materials to be used in projects where TDA is a demonstrated alternative.

Timing: This project will begin after Project #1 is completed and is expected to take approximately 4 – 6 months.

Expected Outcomes: The objective of this project is to develop a final, professional DVD that promotes TDA in CE applications and results in more projects that utilize TDA based on the merits highlighted in the DVD.

Resource Requirements: Considerable funding will be needed for this project. Potential funding sources include RMA, TIA, RPA, and federal and state funds. The intent is to secure a contract with an established firm specializing in developing marketing media.

Metrics: The primary measure of success for this project is the successful development and distribution of the DVD to the specific target audience and the increase in TDA use in CE applications.

RCC Civil Engineering Committee Project #5: Web-based Inventory

Description:
To facilitate the availability of current and historical information related to scrap tires utilized in CE applications, USEPA, with assistance from the CE Committee, should maintain a web-based inventory of links to such data in the scrap tire section of the USEPA RCC web site. Although this Committee recognizes that such information is available from various existing web-based sources (USEPA, RMA, ASTM, Univ. of Maine – Orono, Clemson University, etc.), the presence of a comprehensive inventory on USEPA's web site should serve as official recognition of such information from the applicable federal environmental regulatory agency. In addition, the Federal Highway Administration (FHWA), the Association of General Contractors of America (AGC), and the American Road and Transportation Builders Association (ARTBA) all maintain web-based information related to DOT projects for CE applications.

Timing:
Completion of the web site by the end of 2007

Expected Outcomes:
Maintaining this information on these respective web sites should serve to encourage the consideration of scrap tire shreds in CE applications and to address related environmental impact concerns.

Resource Requirements:
This will require EPA staff time, workgroup collaboration, and web development resources.

IV. Rubberized Asphalt Committee Action Plan

Committee Members:
Chairman: Serji Amirkhanian, Clemson University

- Michael Blumenthal, RMA
- Winthrop Brown, Georgia DNR
- Doug Carlson, Rubber Pavement Association
- Jason Harrington, FHWA
- Liz Helrich, Central Vermont Solid Waste Management District
- Todd Marvel, Illinois EPA

1. Purpose

To support the expanded and appropriate use of scrap tires in rubberized asphalt mixtures.

Determine the steps that are required to, and develop ways to, encourage use. The Committee is focusing on several issues including:

- Educate the public and increase awareness at all levels about the benefits of using rubberized asphalt
- Identify and find solutions for the perceived barriers in using rubberized asphalt
- Identify and cultivate Champions within various levels of the public sector and government agencies

2. Market Trends

RMA reports that the number of tires diverted to rubberized asphalt decreased from 10 million tires in 2003 to 7.4 million tires in 2005. This represents a decrease of 1% point of ALL tires generated.

3. Project Descriptions

Rubberized Asphalt Committee Project #1: Conduct library research on demonstration projects and generate a list of which states are currently using rubberized asphalt on a regular basis and report on their performance

- Expected Outcomes: A comprehensive report that describes many field applications and laboratory research activities around the country.
- Resource Requirements: Contractor time to send list-serve e-mail to all states, federal agencies, and industry and compile responses. In addition, contractor time to obtain all available information regarding research activities around the country dealing with rubberized asphalt. EPA identifies potential funding sources (if available) and coordinates with appropriate offices and educates relevant partners within EPA and FHWA.
  - Timing:
    - Identify the source of funding to perform the task: January 20, 2006
    - Funding approved or denied: February 20, 2006
    - Identify the Contractor to perform the duties: March 15, 2006

    - E-mail sent to states and other parties: March 30, 2006
    - Draft compendium issued: August 25, 2006
    - Final compendium issued: December 31, 2006
- Metrics: Issue one compendium

Rubberized Asphalt Committee Project #2: Identify perceived obstacles

- Expected Outcomes: List obstacles users are facing and a corresponding list of suggestions showing how to overcome them.
- Resource Requirements: Staff time to send list-serve e-mail to various agencies dealing with rubberized asphalt (e.g., State DOTs, FHWA, etc.).
- Timing: Ask participants to identify obstacles and solutions before February 15, 2006.
- Metrics: List of barriers to free market development and rubberized asphalt use.

Rubberized Asphalt Committee Project #3: Identify decision makers for states and municipalities and update the list frequently

- Expected Outcomes: Identify various decision makers in local, state, and federal agencies that deal with the use of asphalt materials.
- Resource Requirements: Staff time to compile the list and update it frequently.
- Timing: Publish the list by March 15, 2006.
- Metrics: List of identified governmental people dealing with asphalt materials at the state and at the federal level.

Rubberized Asphalt Committee Project #4: Determine How to Promote / Showcase this Process

- Expected Outcomes: Establish a method of approaching state and local agencies to present the process in order to increase the use of these materials.
- Resource Requirements: Staff time to explain the benefits of the process to various agencies by traveling to different states and make presentations. EPA assists in coordination.
- Timing: Ongoing throughout the year (until December 2007)
- Metrics: Identify potential champions in various agencies for a 5% increase in rubberized asphalt use by 2008.

V. Tire Derived Fuel Committee Action Plan

Committee Members:
Chairman: George Gilbert, KY DEP

- Michael Blumenthal, RMA
- Mike Benoit, Cement Kiln Recycling Coalition
- Fernando Burton, California IWMB
- Rick Colyar, Columbus-McKinnon
- Terry Davenport, South Carolina DHEC
- Terry Gray, TAG Resource Recovery
- Mary Hunt, EPA Region III
- Todd Marvel, Illinois EPA
- Keri Myers, LA DEQ
- Brian Shrager, EPA OAQPS
- Jana White, South Carolina DHEC
- Tyrone Wilson, Portland Cement Association
- Mike Winek, Attorney, Pittsburgh

1. Purpose

To support the expanded and appropriate use of scrap tires as a supplemental energy resource in properly permitted industrial facilities.

Determine which industries could use tire derived fuel (TDF) and develop ways to encourage use: The Committee is focusing on these three industries:

- Power Generation Industry
- Cement Plants
- Pulp and Paper Mills

2. Goals and Targets

5% increase by 2008 reflecting proportional growth of the TDF market in relation to its current size.

Success towards this goal will be calculated by the total use of TDF at the end of 2008 using RMA data.

3. Project Descriptions

Tire Derived Fuel Committee Project #1: Assemble data from industry that is using TDF air, water, and product data into a compendium to assist new TDF users and permitting agencies.

- Expected Outcomes: One compendium of before and after air emissions data, water discharge data and TDF size requirements vs. industrial boiler or kiln type and use. For example, there will be before and after data on utility tangentially-fired cyclone boilers, utility circulating fluidized combustion boilers, cement kilns, etc.

- Resource Requirements: State staff time to prepare e-mail, staff time to compile data, contractor time to call industrial users and states; time to assimilate data into a useable form. EPA assists in assembling data and assist state air permitting agencies and helps states understand EPA's policy paper and the regulations pertaining to TDF.

- Timing:
  - E-mail sent to states and industry groups: July 15, 2005;
  - Initial state and industry response: July 31, 2005;
  - RMA and TAG Resources prepares contract scope white paper and identifies possible sources of funding: September 31, 2005;
  - Funding approved or denied: November 31, 2005
  - If approved, data compilation contract issued: January 31, 2006;
  - If not approved, set up central list serve to receive data: January 31, 2006
  - Data accessed or collected: May 31, 2006;
  - Draft compendium issued: September 30, 2006; and
  - Final compendium issued: December 31, 2006.

- Metrics:
  - Issue one compendium

Tire Derived Fuel Committee Project #2: Articulate the benefits of properly using TDF, through references and resources to assist industry groups and states who are interested in using or permitting TDF. Have the states identify potential TDF users.

- Expected Outcomes: Add enough additional TDF users to reach the 5% goal by 2008.
- Resource Requirements: Staff time to explain benefits, permitting, data. Consultation with EPA to clarify Air regulatory terms and requirements.
- Timing: Ongoing available assistance. Ask states to identify potential users before December 31, 2005.
- Metrics: Identify enough potential facilities for a 5% increase in TDF use by 2008.
  Success will be calculated with a change in the National percentage increase in TDF use.

Tire Derived Fuel Committee Project #3: Identify barriers to the free market sustainable use and other hindrances to TDF use. Identify practices that hinder the free market. Identify practices that use the free market system effectively.

- Expected Outcomes: List obstacles to the free market and TDF use.
- Resource Requirements: Staff time to send list-serve e-mail to states and industry and compile response.
- Timing: Ask participants to identify obstacles and solutions before December 31, 2005.
- Metrics: List of barriers to free market development and TDF use.